(12) AUSTRALIAN PATENT ABSTRACT
(19) AU

(11) AU-A-59156/86

(54) HOUSING USING MODULAR ROOMS

(75) MAGNUS GUDMUNDUR BJORNSSON

(21) 59156/86 (22) 24.6.85 (23) 24.6.86 (24) 24.6.85
(43) 8.1.87
(51)[4] E04H 1/02 E04B 1/348
(60) PH 1495
(74) AD

(57) Claim

1. A building system comprised of a plurality of prefabricated modular elements each element comprising one of a predetermined set of basic elements, each element of each set being formed with the same predetermined floor plan, each element of the plurality of elements having external walls between floor and roof lines of the same predetermined height such that, in use, each element may be butted up against any one of the other elements to construct a building therefrom with a compatible ceiling height throughout, the respective external walls of each element of each set being arranged with openings thereto in a preselected pattern such that combinations of chosen elements may be formulated in a range of geometrical arrangements with various ones of the openings matched together to enable access between the internal volumes of adjoining elements and that way enable the construction of a multiple roomed building.

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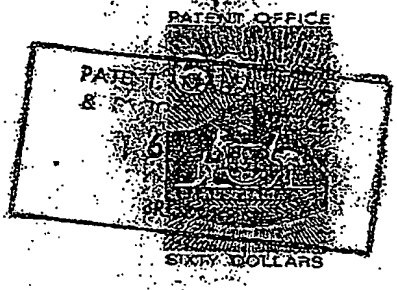
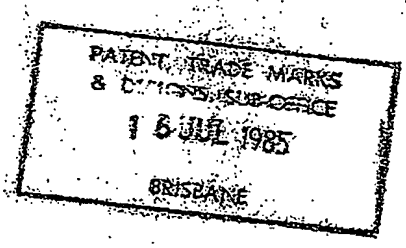


APPLICATION FOR A PATENT



I MAGNUS GUDMUNDUR BJORNSSON

of 5 Cassandra Street, Rochedale South, Queensland, 4128, Australia,

hereby apply for the grant of a Patent for the invention entitled:

"IMPROVEMENTS IN BUILDING SYSTEMS"

which is described in the accompanying Provisional/Complete specification.

My address for service is: C/- GRANT ADAMS & COMPANY, Patent Attorneys, of 333 Adelaide Street, Brisbane, in the State of Queensland, 4000, Commonwealth of Australia.

DATED this sixteenth day of July, 1985.

MAGNUS GUDMUNDUR BJORNSSON,
By his Patent Attorneys,
GRANT ADAMS & COMPANY,

J.G. Adams.

TO: The Commissioner of Patents,
Commonwealth of Australia.

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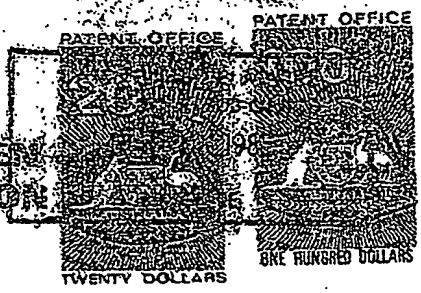
Patents Act 1952

APPLICATION FOR A STANDARD PATENT OR A STANDARD PATENT OF ADDITION



Insert full name(s) of applicant(s)

(71) I/We MAGNUS GUDMUNDUR BJORNSSON

Insert address(es) of applicant(s)

of 5 CASSANDRA STREET, ROCHEDALE SOUTH Q 4128

Insert title of invention

(54) hereby apply for the grant of a ☐ standard patent ☐ patent of addition for an invention entitled HOMLET SYSTEM

(tick appropriate box)

which is described in the accompanying ☐ provisional ☒ complete specification.

Insert name of actual inventor

(72) The actual inventor(s) of the said invention is/are MAGNUS GUDMUNDUR BJORNSSON

ADDRESS FOR SERVICE ALTERED

Insert address for service of notices in Australia

(74) My/our address for service is ~~5 CASSANDRA STREET, ROCHEDALE SOUTH Q 4128~~

Grant Adams & G. Dessaix QC Attorney Code AD

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PATENT, TRADE MARKS & DESIGNS SUB-OFFICE 24 JUN 1985 BRISBANE

for Patents of addition only

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I request that the patent may be granted as a patent of addition to the patent applied for on

(61) Application No. ..... Patent No. .....

in the name of .....

I request that the term of the patent of addition be the same as that for the main invention or so much of the term of the patent for the main invention as is unexpired.

Insert day, month and year form signed

Dated this 19TH day of JUNE 19 85

Signature of applicant or Australian attorney

TO

(Signature)

THE COMMISSIONER OF PATENTS

This form must be accompanied by either a provisional specification (Form 9 and true copy) or by a complete specification (Form 10 and true copy).

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Name of Applicant	:	MAGNUS GUDMUNDUR BJORNSSON
Address of Applicant	:	5 Cassandra Street, Rochedale South, Queensland, 4128, Australia
Actual Inventor	:	MAGNUS GUDMUNDUR BJORNSSON
Address for Service	:	GRANT ADAMS & COMPANY, Patent & Trade Mark Attorneys, 333 Adelaide Street, BRISBANE, QUEENSLAND, 4000 AUSTRALIA.

COMPLETE SPECIFICATION FOR THE INVENTION ENTITLED:

"IMPROVEMENTS IN BUILDING SYSTEM"

The following statement is a full description of the invention including the best method of performing it known to us:

THIS INVENTION relates to improvements in building systems.

The advantages of factory assembled modules or cubicles in the building industry are well known. The main advantages are that factory assembly allows higher quality standards to be maintained than in situ construction and the use of standard modules reduces the costs of manufacture and erection.

However, even the current modular systems have disadvantages and generally they prove to have limited flexibility.

It is an object of the present invention to provide a building system which has great flexibility in the number of floor plans available from a minimum number of modules or cubicles.

Other preferred objects of the present invention will become apparent from the following description.

In a broad aspect, the present invention resides in a building system including a plurality of prefabricated modular elements each element comprising one of a predetermined set of basic elements, each element of each set being formed with the same predetermined floor plan, each element of the plurality of elements having external walls between floor and roof lines of the same predetermined height such that, in use, each element may be butted up against any one of the other elements to construct a building therefrom with a compatible ceiling height throughout, the respective external walls of each element of each set being arranged with openings thereto in a preselected pattern such that combinations of chosen elements may be formulated in a range of geometrical arrangements with various ones of the openings matched together to enable access between the internal volumes of adjoining elements and that way enable the construction of a

multiple roomed building.

Preferably the length of the modules is twice their width. It is preferred that the length of the modules equals 8a and the width equals 4a, a being a basic modular length (e.g. 900mm).

Preferably the walls and openings also have lengths equal to integral numbers of the basic modular length (i.e. the length of the walls or openings equals na, where n is an integral number).

Suitable external cladding may be applied to the side and/or end walls including brick veneer cladding, aluminium or plastic siding, asbestos or metal sheeting or other suitable cladding materials.

When the building structure is erected, a suitable roof structure may be provided, supported on the modules.

In a second aspect, the present invention resides in erecting a building structure employing the modules of the building system hereinbefore described.

To enable the invention to be fully understood, a number of preferred embodiments will now be described with reference to the accompanying drawings, in which:

FIGS. 1 A, B, C and D show the layout of four basic modules A, B, C and D respectively;

FIG. 2 shows a floor plan for a single storey building using only one of each basic modules A to D;

FIG. 3 is a sketch of alternative module layouts for four modules in a single-storey building; and

FIG. 4 is a sketch of alternative module layouts for four modules in a two-storey building.

In a residential building, module A (see FIG. 1) may include a bathroom/toilet 10 between a pair of bedrooms 11 and 12, the rooms being interconnected by a short hallway 13.

The module A is of length 8a and width 4a (a being the basic module unit e.g. 900mm) and the module

is h mm high, with a floor and ceiling (not shown). Both end walls 14 and 15 are closed. One side wall 16 (on the side of the hall way) has wall sections 17 and 18 of 3a length at each end with two openings 19 and 20 each of length a separated by a structural column 21. The other side wall has openings of lengths 3a, a, a and 3a respectively, structural columns 22 to 23 separating the adjacent pairs of openings. Standard doors or windows may be fitted to the openings as required.

Module B has one end 24 closed by a wall of length 4a, while the other end 25 has a wall 26 of length 3a and one opening 27 of length a adjacent the side 28 of the module having two openings 29 and 30, each of length 4a, separated by a structural column 31. The second side 32 has a wall of length 6a and opening 33 of length 2a. A dividing wall 34 may be provided between a main bedroom 25 and an ensuite 36 in a residential building or e.g. an office and an ensuite in a commercial building.

Module C provides a kitchen 37 foldaway laundry 38 and family room 39 in a residential building. One end 40 has openings 41 and 42 of length a separated by a central wall 43 of length 2a, while the other end 43 has an opening 44 of length a and wall 45 of length 3a. One side 46 has two openings 47 and 48 of length 4a separated by a structural column 49, while the other side 50 has an opening 51 of length 4a, a wall 52 of length 2a, an opening 53 of length a and wall 54 of length a.

Module D can be used as a living (and dining) room in a residential building and a reception room, typing room or board room in a commercial building. Both ends 55 and 56 have walls of length 3a and openings of length a while both sides 57 and 58 have walls of

length 3a, and openings of length a and 4a separated by structural columns, the walls and openings 4a being diagonally opposed.

Referring to FIG. 2, it can be seen that the modules may be placed side-by-side over their full length (e.g. modules A and C) or side-by-side half overlapping (e.g. modules B and D).

Referring to FIGS. 3 and FIGS. 4 twenty alternative layouts are shown for single and two-storey buildings using only one each of the four basic modules A to D.

Using modules of the type set out in FIG. 1, it is possible to assemble them in many different combinations so as to construct a large number of different floor plans. The provisional specifications filed in respect of applications PH1495 and PH2098 illustrate a variety of arrangements in its drawings and their disclosures are to be read in conjunction with the present specification when assessing the scope of the invention.

It will be readily apparent to the skilled addressee, that if only two or three of the modules are used, or more than four modules (e.g. 2 modules A, 1 each of modules B and C and 2 modules D), the number of alternative layouts is almost infinite and yet only four basic modules need be manufactured so the system has unique flexibility.

While module of length 8a and width 4a have been shown, other module sizes may be used (e.g. square of length and width 4a or 8a) or rectangular (e.g. of length 6a or 12a and width 4a).

The embodiments described and illustrated have been by way of illustrative examples only and various changes and modifications may be made thereto without departing from the present invention.

The claims defining the invention are as follows:-

1. A building system comprised of a plurality of prefabricated modular elements each element comprising one of a predetermined set of basic elements, each element of each set being formed with the same predetermined floor plan, each element of the plurality of elements having external walls between floor and roof lines of the same predetermined height such that, in use, each element may be butted up against any one of the other elements to construct a building therefrom with a compatible ceiling height throughout, the respective external walls of each element of each set being arranged with openings thereto in a preselected pattern such that combinations of chosen elements may be formulated in a range of geometrical arrangements with various ones of the openings matched together to enable access between the internal volumes of adjoining elements and that way enable the construction of a multiple roomed building.

2. A building system as claimed in claim 1 wherein the elements of at least one set comprise a wet area incorporating fittings to be attached to a water supply.

3. A building system as claimed in either one of claims 1 or 2 wherein the plurality of elements are each rectangular in shape, each having identical lengths, along corresponding sides, the short sides of the rectangular elements being half the length of the long sides.

4. A building system as claimed in any one of the preceding claims wherein there are four sets, three of the sets comprising wet areas incorporating fittings to be attached to a water supply.

5. A building system as claimed in claim 4 wherein the elements of a first set comprise:

side lengths which are multiples of a modular length a;

the two opposed walls on the short sides of the

rectangular element being blank walls of length 4a;

one long wall therebetween being an open wall comprised of three vertical structural columns, a first structural column being disposed at the centre of the wall and the other two being spaced, one on each side of said first structural column at a distance a therefrom;

and the other long wall having a central opening thereto of width 2a with a structural column disposed centrally thereof.

6. A building system as claimed in claim 4 or claim 5 wherein the elements of a second set comprise:

side lengths which are multiples of a modular length a;

one wall on a short side of the rectangular element being a blank wall of length 4a;

the opposed wall on the remaining short side having an opening at one end of width a;

one long wall therebetween having an opening adjoining the end adjacent the blank walled short side, the opening having a width of 2a; and

the remaining long wall being open along its length with a structural column located centrally of the wall.

7. A building system as claimed in any one of claims 4 to 6 wherein the elements of a third set comprise:

side lengths which are multiples of a modular length a;

one wall on a short side of the rectangular element being a blank wall with an opening adjoining one end, the opening having a width a;

the opposed short side having two side openings adjoining each side of the end wall, the openings having a width a;

one long side therebetween being open with a central structural column; and

the opposed long side being open along half its length with the remaining half walled in and having an opening therein of width a, spaced from the end of the side adjoining the corner by a length a.

8. A building system as claimed in any one of claims 4 to 7 wherein the elements of a fourth set comprise:

side lengths which are multiples of a modular length a;

opposed short sides of length 4a which are blank walls with openings therein of width a which adjoin ends joined by the same intermediate long side of length 8a;

the said same intermediate long side being walled in over half its length with an opening therein of width a which adjoins a central structural column; and

the opposed long side being a mirror image of the said same intermediate long side.

9. A building comprised of a plurality of adjoining elements drawn from a building system as set out in any one of claims 1 to 8.

10. A building system substantially as hereinbefore described with reference to the accompanying drawings.

DATED this twentieth day of June, 1986.

MAGNUS GUDMUNDUR BJORNSSON,
By his Patent Attorneys,
GRANT ADAMS & COMPANY.

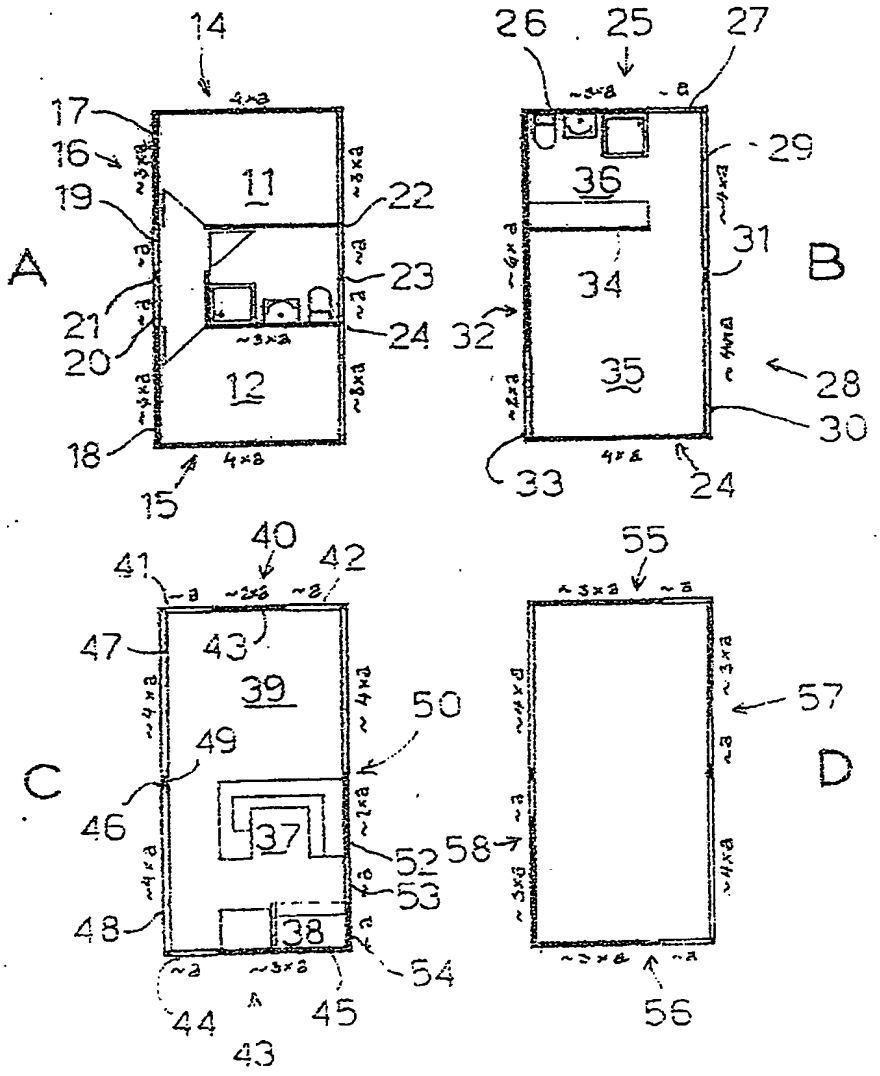
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FIG 1

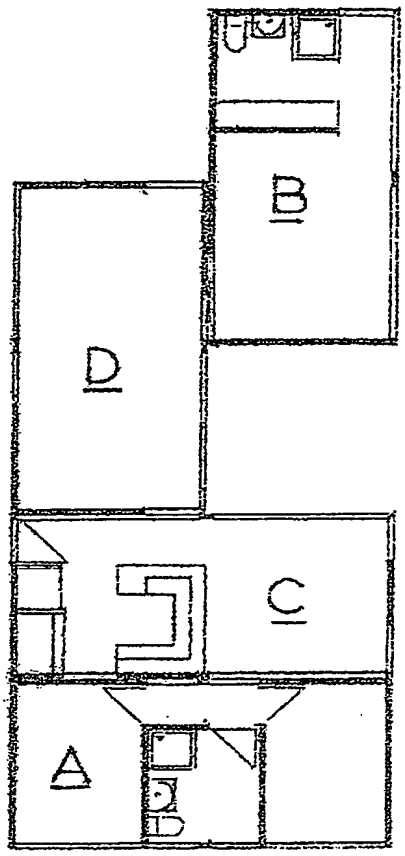

FIG 2

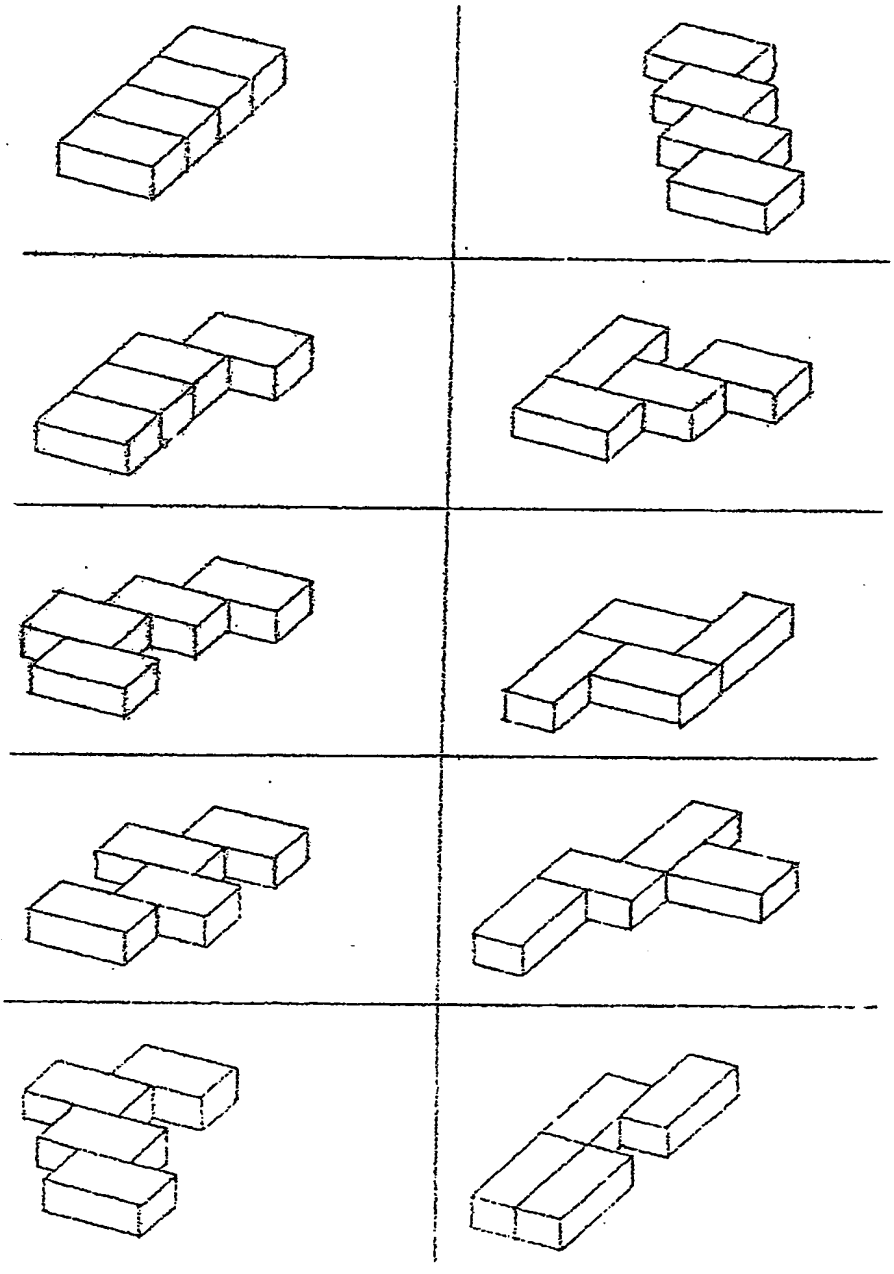

FIG 3

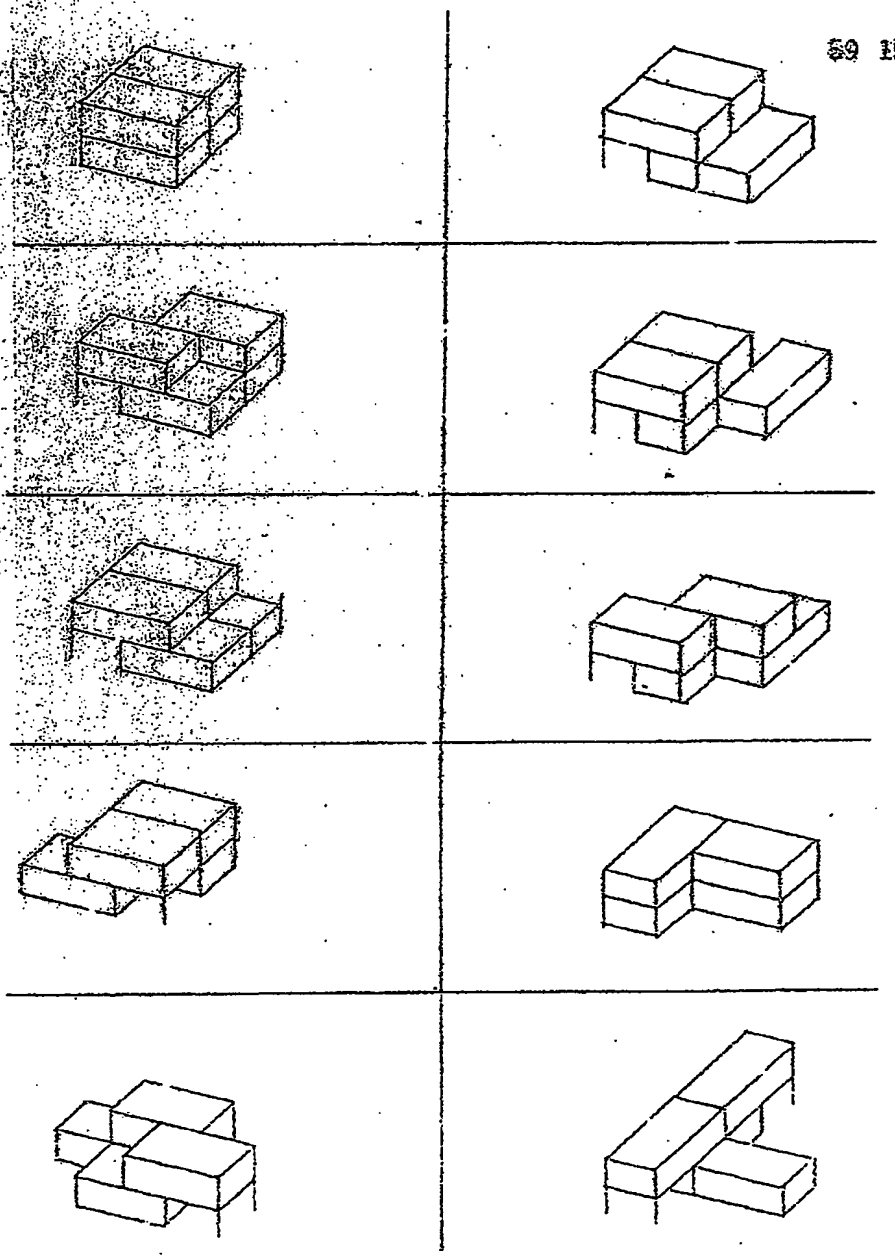

FIG 4

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